



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/393,300 | 09/10/1999 | MOHAMED ANISUR RAHMAN | 2925-237P | 2520 |

30594 7590 03/29/2004
HARNES, DICKEY & PIERCE, P.L.C.
P.O. BOX 8910
RESTON, VA 20195

| |
|----------------|
| EXAMINER |
| MOORE, JAMES K |

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
| 2686 | |

DATE MAILED: 03/29/2004

15

Please find below and/or attached an Office communication concerning this application or proceeding.

SK

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 15, 2003 has been entered.

Response to Arguments

2. Applicant's arguments filed December 15, 2003 with respect to claims 13, 15-19, 38-45 and 47 have been considered but are moot in view of the new ground(s) of rejection.

3. Applicant's arguments with respect to claims 32-37 have been fully considered but they are not persuasive.

The applicant argues that the examiner is not permitted to read a central database independent of the first and second wireless systems on a HLR forming part of a wireless system. See page 14 of the arguments. However, the examiner disagrees with this argument as it applies to the Ho reference. Ho discloses an HLR (109) that is central to multiple wireless systems (MSCs 104-106 and associated BSSs).

See Figure 1. Because the HLR is not associated exclusively with a single wireless system, it can be characterized as independent of the wireless systems.

Claim Rejections - 35 USC § 102

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 32, and 34-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Ho et al. (U.S. Patent No. 6,553,227).

Regarding claim 32, Ho discloses a method of managing data messages. The method comprises sending deregistration data (CANCEL_LOCATION_ACK message) from a first wireless system (in which an Old MSC is located) to a central database (HLR) based on a mobile station transferring from the first wireless system to a second wireless system (in which a New MSC is located). See col. 23, lines 30-35; Figure 20B; and col. 24, lines 54-56. The central database is independent of the first and second wireless systems and indicates which wireless system provides data messaging services for the mobile station. See Figure 1 and col. 15, line 63 through col. 16, line 5. The method also comprises receiving update information (INSERT SUBSCRIBER DATA message) for the mobile station from the central database. It is inherent that the update information includes an identifier of the second wireless system because it is routed to the second wireless system. The method also comprises updating a user profile of the mobile station in a visitor location register based on the received update

information. The user profile is updated to indicate that the second wireless system provides data messaging services to the mobile station. See col. 24, lines 57-60.

Regarding claim 34, Ho discloses all of the limitations of claim 32, and also discloses that the step of sending deregistration data includes sending a signaling message to the central database after the transferring of the mobile station. See col. 24, lines 52-56. It is also inherent that the signaling message includes a mobile identifier and information identifying the first wireless system because the signaling message acknowledges the cancellation of the mobile identifier from the first wireless system.

Regarding claim 35, Ho discloses all of the limitations of claim 34. It is also inherent that the first wireless system is a public wireless system, and that the step of sending deregistering data includes sending a mobile switching center identifier as the information identifying the first wireless system because the deregistration data is sent from the New MSC.

Regarding claim 36, Ho discloses all of the limitations of claim 32, and also discloses that the method comprises cooperating, at the first wireless system, with the second wireless system to transfer service to the second wireless system when the mobile station enters the second wireless system. See col. 23, lines 43-65. It is inherent that the mobile station recognizes that it enters the second wireless system based on a signal parameter measured at the mobile station (such as signal strength or quality) satisfying a first transfer condition.

Regarding claim 37, Ho discloses all of the limitations of claim 36, and it is inherent that the method comprises cooperating, at the first wireless system, with the second wireless system to transfer service back to the first wireless system, if the signal parameter measured at the mobile station satisfies a second transfer condition.

Claim Rejections - 35 USC § 103

6. Claims 13, 19, 38-40, 44, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mills (U.S. Patent No. 5,890,063) in view of Alperovich et al. (U.S. Patent No. 6,101,393).

Regarding claim 13, Mills discloses a system for directing calls in a communications network including a first wireless system (PLMN 10a) and a second wireless system (PLMN 10b). See Abstract and Figure 7. The system comprises a central database (SCP 120), independent of the first and second wireless systems, which sends update information to update a user profile (stored in HLR 90a) in the first wireless system in response to service for a mobile station (30) being transferred from the first wireless system to the second wireless system. The user profile is updated to indicate that wireless communication services are being provided to the mobile station by the second wireless system. See col. 7, line 40 through col. 8, line 4. The system also comprises a service node (GMSC 80a) for directing a call for a mobile station through the second wireless system, as facilitated by the updated user profile, to deliver the call to the mobile station during its operation on the second wireless system. See col. 8, lines 5-60. Mills does not address delivery of data messages to the mobile

station, and therefore does not disclose a service node for directing a data message for a mobile station through the second wireless system, as facilitated by the updated user profile, to deliver the data message to the mobile station during its operation on the second wireless system.

However, Alperovich discloses a system for routing data messages to a mobile station. The system comprises a service node (SMS-GMSC 40) for directing a data message to a mobile station through a destination wireless system. Alperovich discloses that the service node must query a user profile in the recipient mobile station's HLR 26 in order to ascertain the destination MSC of the mobile station. See Figure 2 and col. 3, lines 24-67. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mills with Alperovich, such that the updated user profile also facilitates delivery of data messages by a service node to the mobile station, in order to allow the user of a ported mobile station to receive data messages.

Regarding claim 19, Mills in view of Alperovich teaches all of the limitations of claim 13, and Mills also discloses that the system comprises a service control point (120) for maintaining the user profile. See col. 7, lines 52-55.

Regarding claim 38, Mills discloses a method of managing wireless communication comprising sending registration data (data correlating the MSISDN associated with a ported mobile station with the network address representing a new HLR 90b) to a central database (SCP 120) based on a mobile station (30) transferring from a second wireless system (PLMN 10a) to a first wireless system (PLMN 10b). See Figure 7 and col. 7, line 40 through col. 8, line 4. It is inherent that the registration data

is sent from the first wireless system. The central database is independent of the first and second wireless systems and updates a user profile (stored in HLR 90a) in the second wireless system, which provides wireless communication services to the mobile station. The method also comprises receiving a call for the mobile station from a service node (GMSC 80a). The service node directs the call based on the updated user profile. See col. 8, lines 5-60. Mills does not address delivery of data messages to the mobile station, and therefore does not disclose a service node for receiving a data message for a mobile station and directing it to the mobile station, as facilitated by the updated user profile.

However, Alperovich discloses a system for routing data messages to a mobile station. The system comprises a service node (SMS-GMSC 40) for directing a data message to a mobile station through a destination wireless system. Alperovich discloses that the service node must query a user profile in the recipient mobile station's HLR 26 in order to ascertain the destination MSC of the mobile station. See Figure 2 and col. 3, lines 24-67. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mills with Alperovich, such that the updated user profile also facilitates delivery of data messages by a service node to the mobile station, in order to allow the user of a ported mobile station to receive data messages.

Regarding claim 39, Mills in view of Alperovich teaches all of the limitations of claim 38, and Alperovich also teaches that the received data message is sent to the mobile station. See col. 3, lines 50-67.

Regarding claim 40, Mills in view of Alperovich teaches all of the limitations of claim 38. Mills also discloses that an operator sends a signaling message to the central database during transferring of the mobile station, and that the message includes a mobile identifier (MSISDN) and information (network address) identifying the first wireless system. See col. 7, lines 40-52.

Regarding claim 44, Mills discloses a method of managing wireless communication comprising receiving information based on a mobile station transferring from a first wireless system (PLMN 10a) to a second wireless system (PLMN 10b). The received information includes registration data (data correlating the MSISDN associated with a ported mobile station with the network address representing a new HLR 90b). It is inherent that the registration data is sent from the second wireless system. The method also comprises updating a central database (SCP 120) based on the received information. The central database is independent of the first and second wireless systems and indicates which wireless system provides wireless communication services for the mobile station. The method also comprises sending update information to the first wireless system. The update information is used by the first wireless system to update a user profile of the mobile station in a HLR (90a) to indicate that the second wireless system provides wireless communication services to the mobile station. See Figure 7 and col. 7, line 40 through col. 8, line 4.

Mills does not address delivery of data messages to the mobile station, and therefore does not disclose that the user profile indicates that the second wireless system provides data messaging services to the mobile station.

However, Alperovich discloses a system for routing data messages to a mobile station. The system comprises a service node (SMS-GMSC 40) for directing a data message to a mobile station through a destination wireless system. Alperovich discloses that the service node must query a user profile in the recipient mobile station's HLR 26 in order to ascertain the destination MSC of the mobile station. See Figure 2 and col. 3, lines 24-67. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mills with Alperovich, such that the updated the user profile indicates that the second wireless system provides data messaging services to the mobile station, in order to allow the user of a ported mobile station to receive data messages.

Regarding claim 45, Mills in view of Alperovich teaches all of the limitations of claim 44, and Alperovich also discloses that the service node receives a data message for the mobile station, the first wireless system is queried based on the received data message, an indication is received from the first wireless system that the second wireless system is providing data messaging services to the mobile station, and a data message is directed for the mobile station from the service node to the second wireless system. See Figure 2 and col. 3, lines 24-67.

Regarding claim 47, Mills in view of Alperovich teaches all of the limitations of claim 44, and Alperovich also discloses that the service node receives a data message for the mobile station, an indication is received from the first wireless system that the second wireless system is providing data messaging services to the mobile station, and a data message is directed for the mobile station from the service node to the second

wireless system. See Figure 2 and col. 3, lines 24-67. Mills teaches that the central database may be queried based on the received data message. See col. 7, lines 17-39.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mills in view of Alperovich et al. as applied to claim 13 above, and further in view of well known prior art.

Mills in view of Alperovich teaches all of the limitations of claim 13, but does not teach that the system comprises an authenticator for authenticating the mobile station during or after the transfer from the first wireless system to the second wireless system. However, the examiner takes Official Notice that it is well known in the art that authenticators are commonly used in wireless communication systems to prevent unauthorized users from accessing a wireless communication system. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Mills with Alperovich, such that the system comprises an authenticator for authenticating the mobile station after transfer to the second wireless system, in order prevent unauthorized users from accessing the second wireless system.

8. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mills in view of Alperovich et al. as applied to claim 38 above, and further in view of Bremer ("Inter-PLMN Handover – An Approach for a Functional Requirement Description").

Regarding claim 42, Mills in view of Alperovich teaches all of the limitations of claim 38, but does not teach that the method comprises cooperating, at the first wireless system, with the second wireless system to transfer service to the first wireless system, if a signal parameter measured at the mobile station satisfies a first transfer condition.

Bremer discloses a method for handover for a mobile station traveling from one PLMN to another. The handover method includes cooperating, at a target PLMN, with a serving PLMN to transfer service to the target PLMN, if a signal parameter measured at the mobile station satisfies a first transfer condition. The method provides seamless continuation of a call as the mobile station travels from the serving PLMN to the target PLMN. See Abstract and sections II and V(C). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the combination of Mills and Alperovich with Bremer, such that the method comprises cooperating, at the first wireless system, with the second wireless system to transfer service to the first wireless system, if a signal parameter measured at the mobile station satisfies a first transfer condition, in order to provide seamless continuation of a call if the mobile station travels from the second wireless system to the first wireless system.

Regarding claim 43, Mills in view of Alperovich and Bremer teaches all of the limitations of claim 42, and Bremer also discloses that the handover method may comprise cooperating, at the first wireless system, with the second wireless system to transfer service back to the second wireless system, if the signal parameter measured at the mobile station satisfies a second transfer condition. See section V(C).

Allowable Subject Matter

9. Claims 16-18 and 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter:

The present invention is directed to a system for directing a data message in a hybrid communications network including a first wireless system and a second wireless system. The system comprises a central database, independent of the first and second wireless systems, which sends update information to update a user profile in the first wireless system in response to service for a mobile station being transferred from the first wireless system to the second wireless system.

Claim 16 identifies the uniquely distinct feature "the central database is configured to receive and store a signaling message containing deregistration information from the first wireless system."

The closest prior art, Mills, discloses a system for directing a data message in a hybrid communications network including a first wireless system and a second wireless system. The system comprises a central database, independent of the first and second wireless systems, which sends update information to update a user profile in the first wireless system in response to service for a mobile station being transferred from the

first wireless system to the second wireless system. However, Mills fails to anticipate or render the above underlined limitations obvious.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ken Moore, whose telephone number is (703) 308-6042. The examiner can normally be reached on Monday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold, can be reached at (703) 305-4379.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

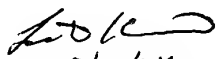
Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Ken Moore

JKM

3/18/04


3/21/04
LESTER G. KINCAID
PRIMARY EXAMINER